

## Amino-MasterBeads 0225

For research use only

### PRODUCT DESCRIPTION

Amino-MasterBeads are monodispersed and super-paramagnetic beads composed of magnetic core encapsulated by a hydrophilic polymer shell. The surface is activated with amine functionality.

Amino-MasterBeads are produced under aseptic conditions and are sold in an aqueous suspension containing 0.09% NaN<sub>3</sub>.

### Physical characteristics

Diameter : 500 nm (CV max 25%)

Magnetization at saturation: approx. 40 emu/g

Specific surface area : 5 m<sup>2</sup>/g

Iron oxide content : approx. 70%

Surface Charge: positive at pH ~2-10

Solid content : 10 mg/ml (1%)

### PRINCIPLE

Amino-MasterBeads are designed to act as solid support for a wide variety of biomagnetic separations and manipulations.

The surface amino groups allow for immobilization of ligands such as proteins, peptides oligonucleotides or other target specific molecules through activation with a large range of different bi-functional reagents and carbodiimide. Biomolecules containing aldehyde or ketone groups can also be immobilized via reductive amination without prior activation of the surface.

Once coupled with ligand, the beads can be added to a cell lysate or other suspensions containing your target molecule. After a short incubation, the beads can be pulled to the side of the test tube by use of a magnetic device allowing aspiration of unbound material. Furthermore, the magnet facilitates washing and concentration of the isolated target.

Version 1.1

### INSTRUCTION FOR USE

The functional amino groups of Amino-MasterBeads offer the possibility for many different immobilisation procedures for use with proteins or other ligands via activation with carbodiimide or bi-functional reagents for example.

#### A) Washing procedure for Amino-MasterBeads

1. Resuspend the Amino-MasterBeads (1%) by pipetting and vortexing. Avoid foaming.
2. Pipette the volume to be used into the desired test tube and complete to obtain a solution at 1% with the Amino 1/2 Activation Buffer of choice according to the preferred conjugation method.
3. Place the tube in a magnet (see Related Product) for 1min.
4. Pipette off the supernatant carefully, leaving beads undisturbed.
5. Remove the test tube from the magnet (see Related Product) and resuspend the beads carefully in the Amino 1/2 Activation Buffer 1X to obtain a solution at 1%. Mix well for 1min.

#### B) Coating procedure using CDI activation : immobilisation of antibodies

The Amino-MasterBeads can be coupled with proteins via EDC (1-ethyl-3-(3-dimethylamino propyl) carbodiimide hydrochloride, MW=191.7) that reacts with the carboxylic acid groups to form an amine-reactive intermediate.

1. Wash the Amino-MasterBeads with Amino 1 Activation Buffer 1X as described above.
2. Dissolve the EDC in Amino 1 Activation Buffer 1X (4mg/ml). Add the required volume of EDC solution to the beads (80µl/mg beads). Vortex to mix properly.
3. Add 10-50µg of antibodies per mg beads. Vortex to mix properly.
4. Incubate for 1h to 2h at 37°C under shaking.
5. Dissolve Bovine Serum Albumine (BSA) in Amino 1 Activation Buffer (0.5mg/ml).
6. Add 100µl of BSA solution to 1 mg of Ab-coated beads. Vortex to mix properly.
7. Incubate for 30min at 37°C under shaking.

8. Wash the beads with the Storage Buffer twice and resuspend the beads at the desired concentration.

#### C) Coating procedure using bi-functional reagents : immobilisation of antibodies

The Amino-MasterBeads can be activated with EGDE (Ethylene Glycol Diglycidyl Ether, MW=174.2) that reacts with the amino groups to form an epoxy intermediate.

1. Wash the Amino-MasterBeads with Amino 2 Activation Buffer 1x as described below (final concentration 1%)
2. Proceed to 1/10 dilution with Amino 2 Activation Buffer 1X and add 50µl of EGDE (technical grade 100%) or 100µl of EGDE (technical grade 50%) per mg of beads. Be careful to homogenize the solution by pipetting.
3. Incubate for 2h at 20°C under shaking.
4. Wash the beads with Amino 2 Activation Buffer 1X twice to eliminate the excess of EGDE.
5. Add 10-50µg of antibodies per mg beads. Vortex to mix properly.
6. Incubate for 2h at 20°C under shaking.
7. Wash the beads with the Storage Buffer twice and resuspend the beads at the desired concentration.

#### Note:

- Adding 0.1-0.5% Tween 20 in Amino Activation Buffers 1X can reduce aggregation phenomena.
- Residual Aggregation can be eliminated by sonication at the end of the coupling procedure.

#### ADDITIONAL MATERIAL REQUIRED

- Magnetic device
- Rotation device
- Test tubes
- Related products :
  - Amino 1 Activation Buffer (# 10102)
  - Amino 2 Activation Buffer (# 10103 / # 10104)
  - Storage Buffer (# 10201)
  - Magnetic Devices
    - Adem-Mag SV, 1.5 ml (# 20101)
    - Adem-Mag MV, 15 ml (# 20102)
    - Adem-Mag HV, 50 ml (# 20103)

#### STORAGE/STABILITY

When stored in unopened vials at 2-8°C, Amino-MasterBeads are stable until expiration date printed on the label.

The Amino-MasterBeads must be maintained in liquid during storage and all handling steps. Drying will result in reduced performance. Do not freeze the product.

#### PRECAUTIONS

Precautions should be taken to prevent bacterial contamination of protein-coated Adembeads. If cytotoxic preservatives are added these must be carefully removed before use by washing.

#### WARNINGS AND LIMITATIONS

**For in vitro research only.** Not for use in human diagnostic or therapeutic procedures.

Sodium azide is toxic if ingested. **Avoid pipetting by mouth.** Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. When disposing through plumbing drains, flush with large volumes of water to prevent azide buildup.

#### WARRANTY

The products are warranted to the original purchaser only to conform to the quality and contents stated on the vial and outer labels for duration of the stated shelf life.

Ademtech's obligation and the purchaser's exclusive remedy under this warranty is limited either to replacement, at Ademtech's expense, of any products which shall be defective in manufacture, and which shall be returned to Ademtech, transportation prepaid, or at Ademtech's option, refund of the purchase price. Claims for merchandise damaged in transit must be submitted to the carrier.